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The American STATISTICIAN

The news publication of the
AMERICAN STATISTICAL ASSOCIATION

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The American STATISTICIAN

FEBRUARY 1950, VOL. IV, NO. 1

The news publication of the
American Statistical Association

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LETTER TO THE EDITOR

The Parity Price Index of the Department of Agriculture

I would like to comment briefly on the parity price index of the Department of Agriculture, as revised in January 1950. The use of the parity index in determining price supports and nonrecourse loans to farmers has made this index a powerful instrument in the distribution of income among various groups in our society. Nor is that all. Its uses now are having far-reaching effects on our fiscal policy and in the waste of natural resources that ought to be conserved in the interest of national security – as in the overproduction and losses involved in the Government's programs on eggs and potatoes.

Most of the changes that I advocated in my article on "Agricultural Price Index Numbers" in the *Journal of the American Statistical Association*, December 1947, were adopted in the 1950 revision. The new parity index is a good series from 1924 to 1934 and is very good from 1935 to date. The only significant deficiencies since 1935 are such services as medical and dental care, railway passenger transportation and movies. The method of resolving the most important problem within the purview of the index-number makers, however, represents a backward step, namely deferring the introduction of automobiles and gasoline until 1924. The original index-number series as developed in the late 1920's included gasoline back to 1910 and automobiles back to 1917. That was before the days of the measured effect on the parity level of alternative economic analyses.

Automobiles were an important item as early as 1910 and, if I am not mistaken, they had become the most important single commodity in farmers' expenditure by 1917. Deferring the addition of these items until 1924 against the weight of evidence becomes of great significance when coupled with their introduction at the March 1924 level of the major subindexes, or 150 per cent of the 1910-1914 base period when we know that prices of automobiles declined considerably in those fourteen years. Those of us who grew up on the farm in the early automobile age can also appreciate that the 1924 cost to farmers of automobiles per mile of – more safe and pleasant – operation probably was less than 75 per cent of the 1910-1914 average, in contrast to an indicated or implied purchase price of 150 per cent.

It is interesting to note that the long-delayed revision would have reduced the parity level a little except for the addition of wage rates for hired farm labor, which now are higher relative to the base period than any of the heterogeneous components previously legislated into the parity index. The extensive and powerful vested interests that might suffer a net loss probably could soon nullify official recognition of any substantial reduction in the parity index at one time. Eventually, however, the 1910-1914 base will be abandoned. Automobiles and related items can then be given their appropriate place in the index number of prices prior to 1924 as they are in the official statistics on farmers' expenditures. The introduction of automobiles and related items into the parity index in 1924 at 150 per cent of the 1910-1914 base period may some day be regarded as the statistical crime of the twentieth century.

Sincerely yours,

ARTHUR G. PETERSON

14 February 1950
Washington, D. C.

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NEWS

ASA Fellows for 1950—Royal Statistical Society receives £30,000 gift—W. Allen Wallis elected editor of Journal—position in Geneva for ILO—Summer courses in statistics — new publications.

American Statistical Association Elects new Fellows

In carrying out the constitutional prescription of an annual survey of the membership of the Association, the committee has come upon the names of statisticians who are clearly distinguished, but who have never been elected to Fellowship, presumably because of their residence overseas. The practice of successive committees has been to elect to Fellowship no one living outside the United States and Canada and strong reasons, chiefly the difficulty of obtaining information, could be adduced for this practice. Improved communications and the increasing internationalization of statistics have however changed the situation. The committee, after a study of the problem, now desires to record its unanimous conviction that foreign members should be honored by election to Fellowship on the same basis as those living here. Since this conclusion was reached late in the year, the committee refrains from announcing at this time any list of foreign members elected to Fellowship.

The committee announces the election as Fellows of the following nineteen American members:

Theodore W. Anderson, mathematical statistician of distinction, contributor to multivariate statistical theory, who has made fruitful excursions into wartime research carried out under the seal and later into economics. The new editor of the Annals of Mathematical Statistics.

Walter Bartky, whose statistical competence has enabled him to contribute to the improvement of methods of industrial quality control, to conduct important wartime researches, to help in his capacity of Dean at a great university to guide the sound development of statistical teaching, to take an active part in committee work including the production of one of the recent reports on the teaching of statistics—and even to teach statistics to students of astronomy.

Dorothy Brady, important for her work on surveys of family budgets, family income, and statistical studies of such data.

Francis G. Cornell, chief statistician of the United States Office of Education, Chief of the education research staff of the United States Senate Committee on labor and education and now director of the University of Illinois Bureau of Educational Research, who has contributed greatly in writing and as a teacher to the development and application of Statistics and its methods.

Harold F. Dodge, leader in the theory and practice of acceptance sampling, meaningful specifications of materials and tests of performance, sampling of industrial materials, and statistical control of quality.

Solomon Fabricant, well known for his distinguished work on the statistics of production, productivity and capital consumption.

Will Feller, mathematician, contributor to knowledge regarding limit laws of probability, and to the theory of renewal of human populations and of industrial aggregates. Former president of the Institute of Mathematical Statistics. Former editor of Mathematical Reviews.

Milton Friedman, economist who has skillfully applied both quantitative and other methods, not only to add to the science of economics but under the call of wartime urgency, to help design metallurgical experiments and participate in the design of weapons and tactics.

Frank R. Garfield, who has developed numerous significant improvements in the measurement of industrial production and current business activity and in the methods of organizing such measurements for purposes of analyzing the current business outlook.

Margaret Jarman Hagood, leader in surveys and studies of rural sociology, employment, unemployment, occupational classifications and theory of sampling.

Hildegard Kneeland, outstanding worker in the field of statistics of income distribution.

Rensis Likert, who has improved the reliability and validity of statistical data through improved questionnaires, improved methods of interviewing, improved methods of selecting and training interviewers, and improved methods of sampling.

Frederick A. Mosteller, who has contributed to basic statistical methods and theory, who has introduced improved statistical techniques in fields of social research, and who has participated in wartime statistical contributions to the great common effort.

Joseph J. Spengler, economist and able student of the statistical problems of human populations.

Donald S. Thompson, who has done distinguished work in the development of improved statistical information in the fields of banking and finance.

Warren Thompson, leader in research into human population problems, long an important interest of the Association.

Louis Leon Thurstone, active worker in the field of mental testing and personnel placement, leader in the dissemination of ideas and methods related to matrices of correlations, experimenter in the actual determination by psychophysical methods of those indifference surfaces which are basic to much economic theory.

John W. Tukey, mathematician, statistician, penetrating critic, expert in quality control, ballistics, and other of the encyclopedia of subjects which are the lot of the statistician.

Charles P. Winsor, biometrician and editor of Human Biology, war research statistician, wise counsellor and teacher.

The Committee on Fellows
Harold Hotelling, Chairman
George W. Snedecor
Lester S. Kellogg
W. Edwards Deming
Morris A. Copeland

Royal Statistical Society to have new home

The Royal Statistical Society has announced that it has received an anonymous contribution in the amount of 30,000 pounds for the exclusive purpose of enabling the Society to acquire its own premises. The Society has appointed a "Benefaction Committee" consisting of the President, the ex-officio Honorary Officers, Dr. David Heron, Mr. H. Campion and Mr. Philip Lyle to consider how best to utilize the gift. It is expected that this special fund will make it possible to find a permanent home which will be worthy of the history, tradition, and dignity of the Royal Statistical Society.

It is with great regret that the American Statistical Association announces the death of Professor Major Greenwood, honorary member of the Association, and the deaths of Joseph A. Schumpeter and Mable E. Dickinson, long time members of the Association.

109th Annual Meeting of A.S.A.

Some 650 members attended the 109th annual meeting of the American Statistical Association held in New York City, December 27-30.

The Program Committee, working under the Chairmanship of Harold A. Freeman, organized one of the best and most varied programs of recent years, thus making it possible for almost everyone in the Association to find sessions of real interest in their own fields.

The 1950 officers of the Association are as follows: *President,* Samuel S. Wilks; *President-Elect,* Lowell J. Reed; *Past President,* Simon Kuznets; *Vice Presidents:* Dorothy S. Brady, Harold A. Freeman, Philip M. Hauser; *Directors:* Gertrude M. Cox, W. Edwards Deming, C. H. Goulden, Frederick F. Stephan, Willard L. Thorp, Louis L. Thurstone; *Members of the Council:* Charles M. Armstrong, Waite S. Brush, William G. Cochran, Donald R. G. Cowan, Maurice I. Gershenson, Morris H. Hansen, Howard L. Jones, Thomas J. Mills, Paul R. Rider, David Schneider, John R. Stockton, Eliot J. Swan, John W. Tukey, W. Allen Wallis, Sylvia Weyl.

Plans are already under way for the 1950 annual meeting of the ASA which will be held in Chicago during the latter part of December. Mortimer Spiegelman, Metropolitan Life Insurance Company, 1 Madison Avenue, New York 10, N. Y., is Chairman of the 1950 Program Committee and Leo J. O'Grady, 208 W. Washington Street, Chicago 6, Illinois, is in charge of local arrangements in Chicago.

W. Allen Wallis elected Journal editor By the Council

At a meeting in New York on December 29, the Council elected W. Allen Wallis editor of the Journal for the five-year period 1950-54. He succeeds William G. Cochran who has served as editor since 1945.

Mr. Wallis is Professor of Statistics and Business Economics at the University of Chicago, and is Chairman of that institution's new statistics department. Before going to Chicago he was a member of the economics departments at Stanford and Yale. He has served as research economist for the National Resources Planning Board and the National Bureau of Economic Research, and during the war was Director of Research for the Statistical Research Group, Columbia University. He is well known for his writings on statistics and economics.

Professor Cochran will have responsibility for the refereeing of papers presented at the New York meetings and for other papers submitted before April 1, 1950. Papers submitted after April 1, 1950, should be addressed to

Professor W. Allen Wallis
207 Haskell Hall
University of Chicago
Chicago 37, Illinois

The book review section is being edited by Professor Wallis effective immediately, so all books and reviews should be addressed to him.

Negotiations for the Transfer of the Periodical Biometrics Under Way

The Biometrics Section of the American Statistical Association at its business meeting on December 29, 1949, voted unanimously to recommend to the Council of the American Statistical Association the following action:

I. *Biometrics* be transferred to the Biometric Society, but that in making this transfer the Directors of the ASA establish conditions with the Biometric Society that provide for

1) the return of *Biometrics* to the ASA in case the journal does not continue to develop strongly under the Society management,
2) appropriate arrangements for supplying *Biometrics* to members of the Biometrics Section of the ASA who are not members of the Biometric Society,
3) the development of the journal under the Biometric Society in such a way as to fill the needs of all groups of biometricians.

II. The Biometrics Section should be continued, its functions to be

1) the development of the interests of biometricians within the ASA in such a way that these interests may be represented on the Council of the Association as provided for in the Constitution.
2) providing a strong biometric program as part of the program of the ASA.
3) cooperating with the Biometric Society so as to assist the Society to develop a strong journal that will meet the needs of all groups. (This might perhaps be done by two members of the Editorial Board being appointed by the Biometrics Section.)

III. The Directors of the ASA make such provision for affiliation of the Biometric Society with the ASA as may be considered mutually beneficial to both groups.

The Council accepted the recommendations of the Section and voted to empower Lowell J. Reed and Harold Dorn, newly elected Chairman of the Biometrics Section, to act as negotiators with Gertrude M. Cox, Editor of Biometrics, and the Biometric Society concerning the transfer of Biometrics to the Society and concerning the future relationship of the Biometric Society to the ASA.

Position available with I.L.O. in Geneva

A post in the Statistical Section of the International Labor Office in Geneva, Switzerland, is now open for United States citizens, between the ages of 23 and 35.

The position requires a thorough preparation in labor statistics and the equivalent of three years of graduate work in statistics and related fields (labor economics) and preferably with specialization in wages statistics.

In addition to English as the mother tongue, a good working knowledge of French is required.

The salary offered ranges from $4,410 to $7,850, free of Swiss income tax.

Those interested should apply to the Washington Branch of the International Labor Office, 1825 Jefferson Place, Washington 6, D. C.

E. E. Day retires

Edmund Ezra Day, long time Fellow of the American Statistical Association retired from the presidency of Cornell University on the 31st of January, 1950. Dr. Day was fifth president of the university and it's first chancellor. In taking leave he stated "the time has come for me to seek relief from heavy administrative responsibilities, even of the limited sort imposed by my present position."

W. F. Callander retires

W. F. Callander, chairman of the United States Crop Reporting Board for nearly a quarter century and one of the country's best known agricultural statisticians, retired on December 31, 1949. Dr. Callander arranged the first cooperative agreement between a State and the Federal Crop Reporting Service in the state of Wisconsin in 1916. This was the forerunner of a series of cooperative agreements by which most of the states of the union have become partners of the Federal -Government in present-day crop and livestock reporting work.

He is continuing his statistical activities at the College of Agriculture, University of Florida, Gainesville, Florida, where he is a visiting lecturer in applied statistics. His place as chairman of the Crop Reporting Board at the Bureau of Agricultural Economics has been taken by S. R. Newell.

Standards for the selection of Fellows

The Council of the American Statistical Association, at its meeting on December 29, 1949, voted to approve the recommendation of the Committee on Committees that the following standards be used by the Committee on Fellows in interpreting the constitutional provision that Fellows shall be "statisticians of established reputation":

In order for a person to be considered a statistician in

CONTINUED ON PAGE 10

Statistics in the Point IV Program

by SAMUEL P. HAYES, Jr.

In his inaugural address in January, 1949, President Truman proposed, as the Fourth Point of a speech devoted entirely to foreign policy, that we undertake "a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas." Pointing out the miserable economic conditions of more than half the people of the world, and the threat that these conditions hold for peace, prosperity and democracy in the world, the President said, "I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life. And, in cooperation with other nations, we should foster capital investment in areas needing development." This proposal is the basis for what is now generally called "The Point IV Program."

Following the President's proposal, the various United States Government agencies with international experience in technical cooperation and investment made an intensive study of the development problems of the economically underdeveloped areas of the world and of the kinds of activities which the United States Government might undertake to accelerate economic development abroad. There are now before the Congress two resulting bills, the first authorizing a wide range of technical cooperation activities in the international field (and authorizing grants to international organizations and to private agencies to carry out such activities), and the second authorizing the Export-Import Bank to guarantee private investment abroad from the risk of loss through inconvertibility of currencies or through expropriation without prompt, adequate and effective compensation. Detailed plans for technical cooperation activities under the first of these bills have already been prepared, and it is estimated that $45 million will be required for the first year's activities. (This $45 million estimate includes a consolidation of programs costing currently about $10 million a year.) The second bill will not require appropriations, as the guarantees would be financed from the existing resources of the Export-Import Bank, and subsequently by public debt transactions, if required.

The President had said, "this program should be carried out through the United Nations, so far as practicable." Consequently, the United States representative at the Economic and Social Council, Assistant Secretary of State Willard L. Thorp, last February introduced a resolution requesting the Secretary General of the United Nations, in cooperation with the various Specialized Agencies, to prepare an expanded and coordinated program of technical assistance in the economic development of underdeveloped countries. This resolution was approved; and such a program was prepared, was extensively discussed last summer at the Geneva meetings of the Economic and Social Council, and was approved unanimously by the United Nations General Assembly, in November. When the necessary funds to carry out this program become available through voluntary contributions by member governments, the program can be put into effect. It is anticipated that the first-year United Nations program will amount to between $20 and $25 million, of which a substantial portion would be contributed by the United States out of the appropriation requested from the Congress for the first year of Point IV.

In the development of both the United States and United Nations programs, governmental experts and private individuals and organizations were extensively consulted. Many professional statisticians participated in this planning work. It is apparent that one of the basic requirements for adequate development planning and for measurement of development progress is the availability of reliable and detailed statistics. Yet, in many countries, the statistical information needed for informed decisions on economic and social matters is often either inadequate or completely lacking.

A recent United Nations report on "Existing Statistical Deficiencies" (E/CN.3/58) discloses that for many countries statistics are not available even on such basic subjects as production, distribution, prices, wages, external trade, transport, finance, national income, employment and unemployment. For example, of 32 countries in Latin America, the Middle East and East Asia which were studied, only 8 are able to supply national income figures, adequate monthly data on external trade, or numbers of principal types of livestock. Only 4 countries were found to collect wage rate data, only 2 have figures on employment and only 1 has unemployment statistics. In all of these countries some kind of administrative machinery for providing statistical data already exists. The experience of the United Nations, the Food and Agriculture Organization, the Inter-American Statistical Institute, and other organizations has demonstrated the utility and feasibility of projects to improve such

existing machinery by making available the knowledge of statistical methods and practices by which more highly developed countries measure economic and social phenomena. For this reason, statistical training and advice in the collection and analysis of statistics is expected to be a major part of the technical programs undertaken by the United States and by the United Nations and its Specialized Agencies, particularly in the early years of these programs. (The concept of aid in economic development implies, of course, a very long range program, extending over generations).

A good deal of statistical training and advice is already being carried on under the aegis of the United Nations and the Specialized Agencies, or provided directly by the United States. For example, the FAO has under way a program of training for government officials who will participate in the 1950 world census of agriculture and forestry that the FAO is sponsoring. The United Nations Statistical Office provides expert consultants for governments desiring to strengthen their statistical services. Through the Interdepartmental Committee on Scientific and Cultural Cooperation, the United States Government has for the past five years been aiding in the cooperative preparations necessary for the taking of the 1950 census of the Americas. Under the leadership of the Bureau of the Census of the Department of Commerce, a coordinated inter-American program of statistical assistance has been conducted by that Bureau, by the Bureau of Agricultural Economics of the Department of Agriculture, by the National Office of Vital Statistics of the Federal Security Agency, and by the Bureau of Labor Statistics of the Department of Labor. This program has the general objectives of (1) giving technical assistance to offices and agencies preparing for and taking censuses of population, agriculture, industry, business, and mines; (2) assisting in the integration of census work with related statistical activities; and (3) assisting and strengthening overall statistical staffs and organizations. These various current activities would be greatly expanded under the technical assistance programs now planned by the United Nations and the United States.

In planning for the United States bilateral program and the United Nations program, it has been estimated that provision should be made in the total program (regardless of what portions are carried out by the United States and by the United Nations) for expenditures during the first year of about half-a-million dollars on general statistics (about half of this being for expert advisors to governments, about one-third for trainees, and about one-sixth for materials, demonstration equipment, etc.). In addition, substantial programs would be carried out in the more specialized fields of agricultural statistics, vital statistics, and labor statistics.

The major kinds of activities that would be carried on under this program are: (1) statistical consultant missions, (2) training of foreign statisticians outside their own countries, and (3) establishing in underdeveloped areas special training centers to teach operational techniques.

1. *Statistical Consultant Missions.* Technical experts in statistics collection and analysis would visit and advise countries requesting assistance in organizing or more fully utilizing their own resources for assembling and analyzing factual data. Many such requests have been received by the United Nations and by the United States. The United Nations Statistical Office would be substantially enlarged by the addition of experts to be used for this purpose. Experts would also be employed by the United States Government to meet requests made directly to this Government.

2. *Training of Foreign Statisticans Abroad.* In many cases the most immediate results can be obtained by bringing personnel from underdeveloped countries to countries with well developed statistical organizations or training centers. Such training might be in universities or other private centers, or in-service training in government agencies or in private statistical organizations. During the last few years, in-service training of this kind has been given by several United States federal agencies, particularly the Bureau of the Census.

3. *Centers to Teach Operational Techniques.* Most of the training of government statistical personnel would need to be undertaken in the countries or regions where their work lies. Statistical training centers would therefore be set up in particular countries, or in some cases in regions comprising several countries having comparable needs and problems. Some of these training centers would be temporary institutions. Others would be more permanent in character.

In general, it is felt essential to improve statistics and to increase the number of competent professional statisticians in almost all underdeveloped countries, as one of the first stages in the intelligent planning of development, the appraisal of specific development programs, and the measurement of the results achieved by such programs. In carrying this program out, many American statisticians will be needed as consultants to foreign governments, and substantial training facilities in this country will also be required. Administration of the program will be facilitated if academic and other arrangements that will permit participation by statisticians are planned well in advance of the time (probably July, 1950) when actual projects are undertaken.

Statistical Training Below the College Level

by S. DUTKA, Elmo Roper, New York
F. KAFKA, The City College, New York

Statistical training beginning at the high school level has been urged by many leading statisticians and organizations concerned with the field of statistics. The National Research Council,[1] for instance, in one of its committee reports suggested the formal introduction of elementary statistics into the high school curriculum ". . . as soon as there is a sufficient supply of trained teachers." Professor Deming[2] has pointed to the ". . . pressing need for introducing very general courses in statistics into the high schools and more widely in the colleges so that future statisticians, future administrators, and future citizens may have the valuable orientation in quantitative thinking about social affairs which statistics affords."

It must be remembered also that many of those who work with statistics in industry, business, and government never receive any formal education beyond the high school level. When they leave school and start looking for work, they are at present poorly equipped to handle tasks which directly or indirectly involve statistics or statistical data.

The statements and recommendations for early statistical training, offered so far, have essentially made the above points. This article is intended to bring these various suggestions a step closer to realization. In the following, we are therefore presenting a tentative program for statistical training at the high school level as well as some ideas for tackling the related and equally vital personnel problems.

Practically everybody may be said to be a consumer of statistics. This applies not only to those who in their occupations have to work with statistics directly but also to that very large group of persons in many fields whose background and know-how might be considerably enhanced if they knew where to get statistical information relevant to their work or private interests, if they understood what it meant and how it could be adapted and used for their purposes.

A single general statistics course in high school is not likely to serve the interests of these two broad and steadily increasing groups. We are therefore proposing two distinct curricula.

One of these is designed to provide formal training for those who are or want to become statistical clerks, interviewers, field workers, assistants in market and opinion research, assistants in sales and production control, statistical draftsmen, typists, computers, tabulators, etc. Today many people occupying positions such as these are haphazardly, if at all, trained in elementary statistics with a large portion of them wasting years of specialized training in other fields. The curriculum outlined below would develop trained "statistical assistants" as a distinct occupational group. These statistical assistants would be adequately prepared for a variety of jobs such as outlined above, even though they did not attend college. They would replace bookkeepers, general assistants, and even junior executives who at present often have to double as part time statistical aides.

The other curriculum is designed as a general "Statistical Appreciation" course for students at the high school level who may or may not go to college and need not specialize in work related to statistics. This curriculum is intended as a fundamental part of general education and, more specifically, as part of a general education course in applied science. Its major aim should be to "bring the student into an awareness of and harmony with the statistical content of our society."[3] In addition to providing information useful in many occupations, both civilian and military, it will also enable those who have taken it to recognize situations which call for specialized statistical help in whatever field of endeavor they may pursue.

It should be noted that the suggested courses would not compete with already established college ones. They would be useful instead as preparation for more comprehensive college work.

The curriculum for the STATISTICAL ASSISTANT course should cover the following topics:

A general review of the fields of application.
This should serve to introduce the student to the various fields wherein statistics is used at present.

Use of numbers.
Review of basic arithmetic processes; computational shortcuts, checking devices; review of real and spurious accuracy in data.

Sources of statistical data – primary and secondary.
Questionnaires and enumeration procedure; use of library reference materials.

Sampling.
Introduction to various types of sampling procedures used – random, stratified, purposive, etc.

Editing and tabulating.
Coding of questionnaires, hand tabulating, scoring, introduction to the use of punch cards.

[1] "Personnel and Training Problems Created by the Recent Growth of Applied Statistics in the United States." A Report by the Committee on Applied Mathematical Statistics, of the National Research Council. Reprint and Circular Series, No. 128, May 1947.

[2] See bibliography.

[3] See bibliography, Snedecor, G. W.

Calculating and tabulating machines.
Operation of adding machines, all makes of calculators, comptometers, introduction to IBM machines; shortcut in techniques of machine computation, use of slide rule.

Presentation of data.
Types of graphs, use of tools and mechanical aids in graphic presentation; tabular presentation.

Ratios and percentages.
Common types of ratios used, the "do's" and "don'ts" of operations with percentages.

Frequency distributions.
Construction of frequency distributions, histograms, frequency polygons, and computation of mean, mode, and median.

Survey of elementary statistical methods.
Time series, index numbers (examples of those in use), measures of dispersion, reliability.

Statistical nomenclature.
Explanation of common terms used in statistics, e.g. Ogive, regression line, scatter, etc.

A textbook for the course outlined above might be Brumbaugh and Kellogg, *Elementary Statistics,* Chapters 1-10. The course will also utilize visual aids and current data. The instructors of such a course should be college graduates with practical experience as statistical technicians.

The STATISTICAL APPRECIATION course would cover the following:

Emphasis upon use of statistics and limitations. Less emphasis on "how is it done" than on "what can we do with it." Illustrations taken from various fields according to type of school.

General problems.
Statistics – definition, its possibilities and limitations.
The statistician – the statistical approach; the role of the statistician.
Types of "statisticians" and "statistical assistants."
The raw material – characteristics, collection and presentation of data.

Ratios – Percentages

What is a frequency distribution?
Cumulative and percentage distributions.
Averages. Arithmetic mean, median, mode; their characteristics.
Computation of mean, graphic analysis of median and mode.
Dispersion. Range, quartile deviation, average deviation, standard deviation, coefficient of variation; their characteristics. Computation of range and average deviation.
Discussion and interpretation of actual frequency graphs.

What is a time series?
Trend. By inspection; selected points method.
Seasonal variation. Averaging of data adjusted for trend.
Forecasting. "One-percent-method".
Discussion and interpretation of actual time series graphs.

Index numbers.
No computations. Discussion of current indexes.

Simple correlation.
Graphic analysis. Regression line by inspection or selected points method.

Sampling.
Types of samples. Market research, quality control. Cost of sampling.

Fallacies.
Many illustrations of erroneous use of statistics.

Discussion of selected newspaper reports and periodicals.

Since there is at present no text available which covers the material in the manner indicated above, this course would initially be given with the help of mimeographed class notes and visual aids. The instructors of such a course should possess qualifications similar to those required for regular college teachers.

One of the major obstacles to be overcome in connection with the program just outlined, is the lack of qualified teachers. Full use of existing resources might help considerably at the outset. Thus, regular qualified college teachers, full and part time, could be employed to teach the "Statistical Appreciation" course in addition to their college work. Qualified men from industry, government, etc. might form the nucleus of the teaching body for the "Statistical Assistant" course.

As for the integration of the program into the school system, it might be most expedient to introduce it first into private business schools, adult education courses, etc. In time, the "Statistical Assistant" program could also be adopted in commercial high schools as part of the regular curriculum and the "Statistical Appreciation" course could be introduced into high schools offering a general course.

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A Proposal for a National Placement Service

by ROBERT O. DORMAN

The operation of an effective placement service is an important function of a professional association. By means of this service, greatly improved information on available employment opportunities will be available to the membership, while employers will be assured of suitably qualified applicants. During the past several years some of the local chapters have engaged in pioneering work along this line, and some efforts have been made by the National Office to assist members in securing suitable assignments. With the growth of the Association and the expansion of its activities, the Association is now ready to undertake the coordination of these local programs and their development into an extensive and truly effective nationwide service.

At the request of the Secretary, the writer has developed recommendations for establishing a National Placement Service designed to coordinate and expand both national office and local chapter work in this field. The recommendations are necessarily tentative and are presented with the hope that they will elicit comments and suggestions from the members. Suggested basic forms for registration of applicants and for recording job orders have been drafted and are being submitted to each chapter for review and comment. The recommended principles and procedures which follow are intended to provide the framework for establishing a national placement service.

RECOMMENDED PRINCIPLES

1. The service should be national in scope, with the National Office serving as a clearing house and providing necessary coordination to the activities of the local Chapters in this field.
2. The service should be restricted to applicants who are members of the ASA.
3. No fees should be charged either to applicants or to employers making use of the service.

RECOMMENDED BASIC PROCEDURES

1. Each ASA Chapter should establish a placement committee to serve the needs of its members and to carry on liaison with the National Office in placement matters.
2. Appropriate publicity to the service should be given in each issue of the *American Statistician*, and consideration should be given to advertising the service in selected trade journals.
3. Standard forms should be used by all Chapters for registering applicants and for recording job orders.

RECOMMENDED OPERATING PROCEDURES

1. Applicants should be required to prepare two or more copies of the registration form. When the initial registration is made with a local Chapter, the Chapter should retain one copy of the form and forward the other copy to the National Office. When initial registration is made with the National Office, a copy of the registration form (if submitted by applicant) would be forwarded to the local Chapter designated by the applicant.
2. Both the National Office and the local Chapters should maintain "active" and "inactive" registration files. The National Office should circularize applicants every 90 days to determine whether they desire to maintain the registration on an "active" basis. Failure of the applicant to reply to such a notice would indicate that he is no longer available for employment, and the National Office would notify the Chapter concerned accordingly.
3. When an applicant is placed in a job (or advises that he is no longer available for placement), the office receiving such information should advise the other (i.e., the Chapter or the National Office, as the case may be) accordingly.
4. The Placement Committee for each Chapter should perform the following functions:

a. Conduct a continuous campaign to induce employers to recruit through the ASA by means of personal contacts, letters, bulletins, etc. and solicit orders for specific job openings.

b. Urge members to utilize the placement service, stressing the fact that the service is not limited to new or unemployed members, but is open to any member desiring a change in employment.

c. Refer qualified local members to employers who have summitted job orders.

d. Transmit copies of job orders which cannot be filled by the Chapter to the National Office.

e. Provide members with information on job openings known to exist but for which definite orders have not been obtained.

f. Obtain current information concerning examination announcements for statistical and related positions issued by municipal and State governments, as well as those issued by regional offices of the U. S. Civil Service Commission. Forward such information to the National Office in order that it may be published in the *American Statistician*.

5. The National Office shall:

a. Maintain files of applications and job orders.

b. Refer qualified applicants to employers.

c. Circularize job orders to the Chapters when applications for qualified applicants are not available in the National Office file.

d. Circularize applicants periodically to determine their availability.

e. Circularize employers periodically to determine current status of job orders.

f. Obtain information concerning examination announcements for statistical and related positions issued by the headquarters office of the U. S. Civil Service Commission and make such information available to the membership through the *American Statistician*.

Program of the Section on Economic and Business Statistics

by HOLBROOK WORKING and RALPH J. WATKINS

At the Annual Meeting of the American Statistical Association in New York City a Section on Economic and Business Statistics was formed, and was given official standing by action of the Council of the Association at its meeting on December 29, 1949. A committee for the new Section, comprised of members of what had been two separate Provisional Section Committees, and a few others, began the work of the new Section in a meeting on December 30.

The Section has been established, in conformity with provisions of the new Constitution of the Association, to aid in obtaining effective representation of the professional interests of economic and business statisticians. Those interests range in one dimension, from administration of statistical compilations to intensive analytical research. In another dimension, they range from treatment of the operational statistics of an individual business concern to international comparisons of the economies of nations. And since statistical study must often probe deeply in a narrow field, the company of economic and business statisticians includes many small groups with highly specialized and quite diverse interests, touching nearly every aspect of economic activity. Despite this diversity, it was concluded that the interests overlap to such an extent that they may be served best, at least initially, by a single section.

Plans

The first task of the Section Committee is to organize the program in its area for the 1950 Annual Meeting of the Association. The Committee particularly urges members who have been dissatisfied with representation of their special interests on recent programs and in recent publications to submit suggestions for topics and for speakers. Offers to take charge of organizing sessions on particular topics, and offers to present papers, will be especially welcome.

It will be impossible, of course, to carry out more than a fraction of the suggestions received; but some suggestions will be similar or identical and their repetition will help to indicate which topics deserve first attention; and suggestions which cannot be carried out will provide a back-log of ideas for future programs, and will give an indication of needs for providing publication facilities.

The second main task of the Section Committee will be to explore needs and possibilities for providing better opportunities for publication of articles concerned with economic and business statistics. Some people complain that available media of publication are either interested only in certain special fields, or tend to require excessive condensation of the treatment of the statistical aspects of papers submitted. Other people maintain, on the contrary, that there exists ample opportunity for publication of all work that deserves publication. The Committee will be glad to receive further expressions of opinion on this question, but it needs particularly to be informed of specific papers, either already written or contemplated, which the authors feel do not now have as appropriate channels for publication as the Association might provide.

Suggestions regarding either program topics and speakers or publication needs, if they relate to business statistics, should be sent to Ralph J. Watkins, Dun and Bradstreet, Inc., 290 Broadway, New York 8, N. Y.; or if they relate more particularly to non-business questions in economic statistics, to Holbrook Working, Stanford University, Stanford, California. Interested persons who have opportunity to discuss their ideas with any members of the Section Committee are urged to do so in addition to writing as requested above.

Background

Until the afternoon of December 29 it had seemed desirable to most of the persons actively concerned that separate sections should be established for business statisticians, on the one hand, and economic statisticians, on the other. A provisional business statistics section was formed at the Cleveland meetings in December 1948, and its Committee participated in arranging the program for the 1949 Annual Meeting of the Association. Early in 1949, discussions looking toward the formation of an Economic Statistics Section were initiated actively; and following circulation of a questionnaire among Fellows and Chapter Officers of the Association, provisional officers for such a section were elected. They submitted a report and recommendations to a section business meeting on the afternoon of December 27.

At the business luncheon meeting of the Business Statistics Section (provisional) on December 29, attended also by the Chairman of the Economics Statistics Section (provisional), there was extensive discussion of the Business Statistics Section and of the relationship between it and the Economic Statistics Section. All those who spoke urged at the minimum that the two sections must work closely together, both in terms of the program for the Annual Meeting and in terms of the Journal. Several of those present spoke on the advantages of separate sections, but cooperating closely, whereas others expressed strongly the view that the two sections should be merged at the outset. A vote on the question was taken, and 35 of those present indicated a preference for such a merger, against 2 favoring separate sections.

The position of persons interested in the Economic Statistics Section was evident from the fact that in returns from the questionnaire regarding organization of an Economic Statistics Section, 41 of the 49 respondents who indicated primary interest in economic statistics had expressed preference for combination of economic and business statistics in one section. The representatives present from the two provisional section committees therefore met at once and effected a

union of the two committees. This action was reported to the Council meeting that evening and, on recommendation from the Committee on Committees, was approved, as we have already noted.

Survey of opinion

As part of the exploration of membership wishes preliminary to organizing of an Economic Statistics Section (provisional), a questionnaire was sent in mid-August to Fellows and Chapter Officers of the Association. At the suggestion of the Business Statistics Committee (provisional) a question was included asking opinion as to whether business and economic statistics should be represented in separate sections or in a single section. Returns from the questionnaire are summarized below.

Present members of the Section Committee on Economic and Business Statistics are: Holbrook Working, Chairman; Ralph J. Watkins, Vice Chairman; Lester S. Kellogg, Secretary; Henry B. Arthur, Robert W. Burgess, Morris A. Copeland, Stephan M. DuBrul, Richard L. Funkhouser, Martin R. Gainsbrugh, Frank R. Garfield, Millard Hastay, Joseph K. Heyman, Walter E. Hoadley, Donald C. Riley and Benedict Saurino.

Number of Fellows and Chapter Officers questioned	224
Number of replies	94[a]
Favored establishing Economics Section	87
Would affiliate with Economics Section	75[b]
Economics would be primary affiliation	49
Business Statistics would be primary affiliation	11
Some other section desired for primary affiliation	9[b]
Designated no desired primary affiliation	6
Number of replies regarding relations of Economics and Business Statistics	80[b]
Favoring combination in one section	55
Favoring separation	23
Uncertain	2
Favoring election of Section Officers by Section members	67
Indifferent to question	6[c]
Opposed to election of Section Officers	6
Favoring election by all Section Affiliates	2
Total indications of opinion regarding election	81

[a] 83 replies were received by Sept. 26 in response to initial mailing; 11 replies were in response to a follow-up inquiry.

[b] Including one professional economist whose expressed wish was to affiliate with a section which would cover economics and business and other social science fields as well.

[c] Four persons who indicated desire to affiliate with an Economics Section but who expressed no opinion on election of Section Officers are counted as indicating indifference.

NEWS

CONTINUED FROM PAGE 3

the sense of Par. 2 of Article 3 of the Constitution, it is necessary that he have contributed to the objectives of the Association either through the application of his knowledge of statistical methodology or principles to some subject-matter field or through contributions to statistical methodology itself. Due consideration shall be given to outstanding teaching and administration of statistics, to the development of statistical methods, and to their adaptations to various subject-matter fields.

It is suggested for the guidance of the Committee on Fellows that a statistician's reputation may be established by accomplishments in various fields, contributions, cooperation in publication of statistical periodicals or in planning and prosecution of major statistical projects, and creative training of statisticians.

Three Sections of the ASA Formally Established by Vote of the Council

Upon recommendation of the Committee on Committees, the Council of the American Statistical Association at its December 29, 1949, meeting, voted to establish under the new Constitution the following three Sections.

Section on the Training of Statisticians.
Section on Business and Economic Statistics.
Biometrics Section.

The information form for the 1950 directory of the Association includes a place to indicate sectional interests so that it is expected by mid 1950, all members interested in receiving information about any of the three Sections will be on the appropriate mailing list.

New Membership and Subscription Rates Voted By the Council of the ASA

The following schedule of membership dues and subscription rates were voted by the Council of the American Statisticial Association at its December 29, 1949, meeting upon recommendation of the Board of Directors. Article II, Section 1 of the By-Laws of the Constitution provides that ". . . *When the Council has approved the Board's recommendation, the new schedule shall be announced in the news bulletin and shall become effective at the beginning of the next calendar year unless, within a period of four weeks after the mailing of the news bulletin, there shall be demanded a referendum as provided in Article VI, Section 5 of the Constitution.*"

Dues	
Regular members	$8.00
Sponsoring members	25.00
Student members (for a period of 4 years)	4.00
Family membership (an additional $2.00 for husband and wife receiving only one copy of the periodicals)	2.00
Introductory dues for persons under 30 (for the first year only)	4.00
Associate members of the Biometrics Section	4.00
Life membership as voted on October 7, 1948, i.e., 25 to 30 years at joining	200.00
Over 30 at Age A	290.00-3A
Subscriptions	
Journal	
Regular subscription to non-members	8.00
Allocation of members dues	5.00
Rate to members of associated or affiliated societies	5.00
Biometrics	
ASA members	3.00
The American Statistician	1.50

American Association for Public Opinion Research

At a meeting of its Executive Council, AAPOR has laid plans for its 1950 meetings to be held jointly with the World Association for Public Opinion Research (WAPOR) at Lake Forest College, near Chicago, June 16 to 20.

The program which is now being planned will be designed to fit the needs of the Association's membership, which is composed of leaders in both the academic and commercial fields.

Third Annual Summer Institute in Survey Research Techniques

The Survey Research Center of the University of Michigan will hold its Third Annual Summer Institute in Survey Research Techniques from July 24 to August 18, 1950.

The following courses will be offered: Introduction to Survey Research, Survey Research Methods, Sampling Methods in Survey Research (Introductory), Sampling Methods in Survey Research (Advanced), Mathematics of Sampling, Statistical Methods in Survey Research, and Techniques of Scaling.

In addition, the introductory courses will be given from June 26 to July 21. This will permit students who are attending the full eight week summer session of the University (June 26 to August 16) to register for the introductory courses during the first four weeks.

It is expected that this special session will attract men and women employed in business or governmental research or other statistical work and university instructors and graduate students with a particular interest in this area of social science research.

All courses are offered for graduate credit and students must be admitted by the Graduate School. Inquiries should be addressed to the Survey Research Center, University of Michigan, Ann Arbor, Michigan.

Statistical summer session in Berkeley, California

Following the established pattern, there will be held this year a Statistical Summer Session at the University of California, Berkeley. The faculty will include William G. Cochran of Johns Hopkins University, Benjamin Epstein of Wayne University, Erich L. Lehmann of the University of California, Paul Levy of the Ecole Polytechnique, Paris, France and Gottfield E. Noether of New York University.

Courses will be offered on both the graduate and the undergraduate levels. The graduate courses, all given during the First Summer Session, June 19 to July 29, are meant primarily for students who either have already obtained their Ph.D. degree or are working toward it. No specific prerequisites to graduate courses will be required. The graduate program includes (i) a course on design of experiments and a seminar on analysis of variance by W. G. Cochran, (ii) a course on theory of estimation by E. L. Lehmann, and (iii) a course and a seminar on random variables and random functions by Paul Levy.

Inquiries should be addressed to the Office of the Summer Session, 1A Administration Building, University of California, Berkeley 4, California.

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CHAPTER NOTES

CENTRAL INDIANA

The January dinner meeting was an "I Predict" session at which farm production and prices, movement of non-agricultural employment, the consumer price index and the general business index for the state of Indiana, were the subjects for predictions. The panel of speakers included Donald Paarlberg, Department of Agricultural Economics, Purdue University; Dwight Kelley, Chief of R. and S., Indian Employment Sec. Div.; George Starr, Director Indiana Bureau of Business Research.

CENTRAL NEW JERSEY

The December meeting was devoted to discussion of "How Sampling Authorities Can Best Serve Commercial Research" by Darrell B. Lucas, Vice-Chairman of the Department of Marketing of New York University and technical director of the Advertising Research Foundation, and advertising research consultant.

The January meeting dealt with the "Plans for the 17th Census to be taken in April 1950" on which both Frank Notestein and Frederick F. Stephan of Princeton University spoke.

The February meeting was addressed by Charles L. Kofke, Chief of Research and Statistics of the New Jersey Division of Employment Security, who spoke on "Statistical Aspects of the Employment Security Program in New Jersey." Mr. Kofke has developed for the New Jersey Unemployment Commission a number of important statistical series pertaining to employment, wages and unemployment of the state.

CHICAGO

At the December 20 meeting of the Statistical Technique Luncheon Group, Eugene Pomerance of McCann-Erickson Co., spoke on "Uses and Misuses of Regression-Correlation Techniques."

Howard L. Jones, Illinois Bell Telephone Company, discussed "Auto Correlation" at the January 17 meeting of the Statistical Techniques Luncheon Group.

The March meeting of the Statistical Applications Group, meeting jointly with the American Marketing Association, will hear David Heffler, Chief Statistician of A. J. Wood and Company, speak on the "Applications of Probability Sampling" in the work of his own company, A. J. Wood of Philadelphia.

At a joint meeting with the Chicago Section, American Society for Quality Control, A. G. Dalton, Superintendent of Quality Control for Western Electric Company, spoke on "Specifications, Measurements and Control of Quality."

The February 2 meeting was devoted to discussion on the "Development of Area Sampling" by R. J. Jessen, Acting Director of the Iowa State Statistical Laboratory.

Kenneth W. Haemer of American Telephone and Telegraph, Chairman of the ASA committee on Graphic Presentation and presentation editor of *The American Statistician,* spoke at the February meeting on "Do You Really Know How to Make a Chart?"

The March 21 luncheon meeting will hear Leon Hurwicz, Professor of Economics and Mathematical Statistics in the Graduate College, University of Illinois, speak on "Applications of the Theory of Games."

Future meetings will include:
April 26 (Wednesday)—Arnold Bernhard, Value Line Investment Service.
May 24 (Wednesday)—Frank Garfield, Federal Reserve Board; Edward Hollander, Bureau of Labor Statistics.
June 14 (Wednesday)*—Sumner Slichter.

* Tentative.

DENVER

Charles Powell, Actuary with Coates, Herfurth, and England, Consulting Actuaries, spoke on "The Actuary in Statistics" at the December meeting of the Chapter.

The January and February meetings were devoted to discussions by Dale Lobsinger, United Air Lines, on "Statistical Quality Control" and to a discussion of "Statistics and the Weather" by Albert W. Cook, Meteorologist and Supervising Forecaster, United States Weather Bureau. At the March meeting, Norman K. Kelley, Research Director, The Mountain States Employer's Council, will speak on "The Place of the Wage Survey in Employer-Employee Relations." On April 13 David Hawkins, Professor of Statistics, University of Colorado Medical Center, will discuss "Some Applications of Biostatistics" and on May 11, at which time the annual meeting of the Chapter will be held, officers will be elected and there will be a panel discussion of graphic presentation.

HAWAII

1950 officers of the Chapter are:
President—Chester K. Wentworth; First Vice-President—Keith A. Hill; Second Vice-President—John Y. Springer; Secretary-Treasurer—Margaret S. Wright.

UNIVERSITY OF ILLINOIS

During the month of December, the Chapter organized a series of five lec-

tures on "Information and Automata." These lectures grew out of a discussion which followed an address by Louis E. Ridenour, Dean of the Graduate College, on the subject of cybernetics. The series included: A. T. Nordsieck, Professor of Physics, "The Analogy Between Entropy and Information;" W. G. Madow, Professor of Mathematical Statistics, "Definitions of Amount of Information;" A. H. Taub, Research Professor of Applied Mathematics, "Computing Machines;" N. Wax, Associate Professor of Electrical Engineering, "Communication Theory;" W. McCulloch, Professor of Psychiatry and Physiology, "Nervous Systems."

The February meeting was devoted to a discussion of "Statistical Techniques in Industry." The speakers included M. E. Wescott, Department of Mathematics, Northwestern University; I. W. Burr, Statistical Laboratories, Purdue University; E. G. Olds, Department of Applied Mathematics, Carnegie Institute of Technology; W. G. Madow, Department of Mathematics, Universiity of Illinois. Their topics included "Statistical Philosophy and Techniques," "A Few Industrial Applications of Statistical Techniques," and "Statistics in the Engineering Curriculum."

NEW YORK

The New York Chapter was so busy planning the details and comfort of the annual meeting at the Biltmore that little time or energy was left for local activities. The Chapter has a group of about 200 enthusiastic volunteers, who helped with this work. They had two meetings in December, followed by a dutch treat dinner for those who wished to remain. The volunteers expressed their delight with the professional and social contacts made in this manner.

Frank A. de Hermida, West Indies Sugar Corporation, Treasurer of the New York Chapter, was Chairman of the local arrangements committee for the Convention. He was assisted by Madeline McWhinney, Federal Reserve Bank of New York; Mary S. Rahikka, National Broadcasting Company; Richard L. Kraybill, Dun & Bradstreet, Inc.; press, Louise C. Mann, American Paint Journal; membership, John I. Griffin, College of the City of New York; placement, Anthony Lo Bianco, Mutual Insurance Statistical Association; and Waite S. Brush, Consolidated Edison Company of New York, President of the New York Chapter. Mr. Hermida entertained the members of his committee at dinner at the Columbia University Club before the Convention.

The Chapter Committee on Federal Censuses for New York City, at its meeting on December 2 approved the report of the subcommittee which has been cooperating with the Bureau of the Census in the establishment of the 1950 Census Tract boundaries. Dr. Neva R. Deardorff, Chairman of the Committee, presided, and Florence E. Cuttrell was Secretary.

The Statistical Techniques Division held the first of a series of six monthly meetings on December 7th at the Johnny Victor Theatre in the R. C. A. Exhibition Hall. The speaker was Dr. Lawrence R. Klein, National Bureau of Economic Research, who discussed "Economic Model Building and Forecasting of National Product." Nathan Morrison is Secretary of this group.

The January meeting was a discussion of "Sampling of Physical Materials." W. Edwards Deming, Division of Statistical Standards, U. S. Bureau of the Budget, was speaker.

At the February meeting, Howard Levene of Columbia University spoke on "Statistical Problems Connected with the Heredity of the Rh Factor in Man."

NORTH CAROLINA

The North Carolina Chapter of the American Statistical Association held its Fall meeting at Chapel Hill. Professor Dudley J. Cowden, University of North Carolina, arranged and presided over a symposium on "The Teaching of Elementary Statistics." Professor Harold Hotelling, Institute of Statistics, introduced the topic with a fifteen-minute talk, and brief discussions were then heard from a number of teachers of statistics in different fields of aplication from the University of North Carolina, Duke University, State College and Women's College. The scheduled activities of the Chapter included a Winter meeting in January at Durham, and a Spring meeting to be held in April at Raleigh.

OKLAHOMA

Officers elected for 1950 are: Margaret Shackelford, State Department of Health, President; Robert S. McCauley, Bureau of Agricultural Economics, 1st Vice-President; Walter B. Jessee, Employment Security Commission, 2nd Vice-President; W. G. Hill, Bureau of Agricultural Economics, Secretary-Treasurer.

The December meeting was addressed by Douglas Jones of International Business Machines who discussed the new "Electronic Statistical Machine" which has been built by the International Business Machines for the Census Bureau to handle the tremendous job of analyzing the 1950 census material.

PHILADELPHIA

The January 26 meeting was addressed by Philip M. Hauser, Acting Director, U. S. Bureau of the Census, who discussed the "Plans for the 17th Decennial Census."

The February meeting of the Chapter was devoted to a discussion of The International Bank at Work." Dr. William G. Welk, Chief Economist, Bank for Reconstruction and Development, was the speaker.

SAN FRANCISCO

Newly elected officers of the Chapter are: President, Bernard Etcheverry, Kaiser Company; Vice-President, Davis McEntire, University of California; Secretary-Treasurer, Harry S. Schwartz, Federal Reserve Bank.

ST. LOUIS

The December meeting was addressed by David B. Carpenter, Assistant Professor of Sociology, Washington University, formerly Chief of the Statistics Division, Statistics and Reports, Special Staff Section, MacArthur's General Headquarters, Japan. Mr. Carpenter spoke on "The Use of Research and Statistics in MacArthur's Military Government of Japan."

The February meeting was addressed by Hiram C. Martin, St. Louis Housing Authority, who spoke on "Statistical and Research Problems in the Development of Urban Housing." Mr. Martin discussed the data needed to obtain federal aid for public housing; the methods used in obtaining these data and the extent to which this same data can be used in planning public housing for public purposes. He also discussed the statistics needed in the administering of housing projects; how they can be obtained and the relationship of the statistical and research problems in St. Louis to the problems faced by other public and private agencies in the city.

Future meetings of the Chapter will discuss "Statistical and Research Problems in Traffic and Mass Transportation in the St. Louis Area," and the "Problems in the Taking of the 1950 Census" as indicated by local personnel engaged in local census enumeration.

The Chapter has appointed a membership committee with Jane Bierdeman as chairman and Kate Grimm, Ruth Shank and Joseph Bappert as members. It is expected that they will continue an active drive for new members during 1950.

WASHINGTON

The December meeting was devoted to a discussion on the use of serial numbers as a device for selecting a sample. Representatives of several Federal Agencies discussed their experiences with samples selected in this way, and some of the problems encountered, particularly in the 1% sample of the Veterans Administration, the waybill sample of the Interstate Commerce Commission, and the continuing sample of the Old Age and Survivors Insurance. Speakers were R. Tyne Smith, Interstate Commerce Commission; A. J. Bonis, Department of the Army; Irving Siegel, formerly with the Veterans Administration; Benjamin J. Mandel, Bureau of Old Age and Survivors Insurance.

At the January meeting of the Chapter, Willard L. Thorp, Department of State, spoke on "The Outlook for Foreign Trade."

The experiences of the Department of Agriculture with modern sampling methods for the collection of Agricultural Statistics was the subject of the February meeting. John C. Scholl and Patrick E. O'Donnell, both of the Agricultural Estimates Division, Bureau of Agricultural Economics, were speakers for the evening.

The Institute of Statistics at Chapel Hill

The faculty of the Institute of Statistics of the University of North Carolina at Chapel Hill alone reaches seven in number with the appointment of S. N. Roy as Professor of Mathematical Statistics on a permanent basis. Professor Roy, who served as visiting professor at Columbia last year, was to have taught at Princeton this year, but because of urgent needs connected with the reorganization of the Indian Statistical Institute returned temporarily to Calcutta. He arrived in Chapel Hill March 2. He is the author of numerous research papers dealing with multivariate analysis, the estimation of multiple parameters and other problems of statistical theory. He has been active in conducting cost-of-living and other sample surveys in India.

Bernard G. Greenberg, who received the Ph. D. degree last June in Experimental Statistics, has been appointed to the newly created post of Associate Professor of Biostatistics jointly in the Institute of Statistics and the School of Public Health at Chapel Hill. George E. Nicholson, Jr., is now Assistant Professor of Statistics in the Institute of Statistics. The Institute includes both the Department of Mathematical Statistics, engaged in graduate teaching and research at Chapel Hill, and the Department of Experimental Statistics, which carries on teaching, consulting, research, and practical statistical enterprises chiefly at Raleigh. Dr. Nicholson and Dr. R. C. Bose, who became Professor of Mathematical Statistics at Chapel Hill last year, serve as liaison agents between the two departments in addition to the Director, Miss Gertrude Cox.

The Department of Mathematical Statistics, which was set up at Chapel Hill in 1946, does no undergraduate teaching but is devoted to graduate teaching and research in statistical theory and methods. Doctorates with major in mathematical statistics were awarded in 1948 to D. N. Nanda, now with the Government of India, and to George E. Nicholson, Jr.; in 1949 to Ralph A. Bradley, now Assistant Professor of Mathematics at McGill University, and to Uttam Chand, who is now Assistant Professor of Mathematics at Boston University. Approximately four more doctorates are expected this year, with a larger number next year. These numbers are small compared with the need for scholars versed in the theory of statistics, but large compared with the total rate of production of such scholars before the department was established.

The Office of Naval Research supports a project for research in statistical theory under the supervision of Professor Hotelling at Chapel Hill, and numerous advanced students assist with this research. Wassily Hoeffding is Assistant Professor of Mathematical Statistics, and is in charge of the part of this project concerned with rank order statistics and non-parametric inference. Herbert E. Robbins, Associate Professor of Mathematical Statistics, supervises certain other parts of this work.

Thirty five full-time graduate students are enrolled this year as majors in Mathematical Statistics. Among these are a group supported by the Government of India and others sent by the Canadian National Research Council. Faculty members of many other universities have been spending periods of leave ranging from a month to a year with the department, studying and carrying on research.

The Institute of Statistics has been making an unusual contribution to the statistical life of the country at large by bringing to North Carolina from abroad a series of distinguished foreign leaders in statistics, who then become available for other engagements. In 1949 Dr. John Wishart of Cambridge University and Dr. D. J. Finney of Oxford were thus brought to North Carolina, and later lectured in other parts of the country.

The Institute of Mathematical Statistics and the Biometric Society will meet jointly at Chapel Hill March 17 to 19, 1950. The North Carolina Chapter of the American Statistical Association meets three times a year, once in Chapel Hill, once in Raleigh, and once at Duke University in Durham.

NEWS about MEMBERS

E **John W. Enell** received the Eng. Sc. D. degree at New York University and has been appointed Assistant Professor of Administrative Engineering there.

Norbert L. Enrick, formerly Associate Professor of Management, Southwestern Louisiana Institute, has recently become associated with P. O. M. Company—Industrial Consultants and Werner Textile Consultants. He is the author of the recent book, "Quality Control" published by the Industrial Press.

F **Ernest M. Fisher** is now Professor of Urban Land Economics, Graduate School of Business, Chairman of the Administrative Board and Director, Institute for Urban Land Use and Housing Studies, Columbia University.

G **Roe Goodman,** Head of Sampling Section of the Survey Research Center, University of Michigan, has taken leave of absence until June, 1950, in order to serve as Methodological Consultant with the Agricultural Experiment Station at the University of Puerto Rico.

Myron K. Gordon has been given an award for outstanding service in the Army's Surgeon General's Office.

K **Willford I. King** has been awarded a gold medal and a cash prize by the Freedoms Foundation, Inc., for an article published in *The American Magazine*. The article was called "U. S. at the Crossroads" and presents Dr. King's view on "Which Road Will America Travel—to Socialism or to Free Enterprise?"

M **John M. Mitchell** has been granted a leave of absence from the College of Commerce, Tulane University, New Orleans, in order to accept a Fulbright scholarship for study at the University of Paris, France.

P **Irene Price,** formerly Assistant Chief, Air Materiel Command, Dayton, Ohio, is now directing mathematical research on guided missiles for the U. S. Air Force at Holloman Air Force Base, New Mexico.

S **W. H. S. Stevens,** Director of the Bureau of Transport Economics and Statistics, Interstate Commerce Commission, was one of the recipients of the first eleven Paul D. Converse national awards, made on November 26, for outstanding contributions to the advancement of the science of marketing.

QUESTIONS and ANSWERS

edited by FREDERICK MOSTELLER

TESTING DIFFERENCES IN EXTREME GROUPS

Question 24. In an experiment comparing two different measurements, an experimenter has measured a large number of people on variable X. He has then restricted his attention to the upper ten per cent and the lower ten per cent of the original population. On these people, he has obtained values of Y (in some cases these are measurement data like scores on a test, and in some cases just categories, but ordered categories). Now the experimenter classifies this twenty per cent of his subjects into a 2×2, or $2\times r$ table and computes chi-square. The experimenter thinks that he has gotten a much larger chi-square for the number of degrees of freedom available than he would have gotten had he not cast out the middle eighty per cent of his data. He wants to know if he is cheating, and if so why; and if not, why not?

Answer. First we must consider whether the experimenter chose the "upper 10%" and "lower 10%" after an examination of the sample, choosing 10% rather than some other fraction because the relationship between X and Y appeared rather more pronounced with that choice. If he did this, he seems to have fudged, and if he didn't, he seems not to have introduced anything to disturb the usual t-test or chi-square test of the null hypothesis of no relationship between X and Y in the population.

Supposing that his choice of cut-off points (upper and lower 10% instead of upper and lower something else) was made without reference to relationships appearing in the sample, we may examine the reasoning under the null hypothesis, first in the case of the t-test between these groups, and second for the case of the chi-square test for a $2\times r$ table.

For the case of the t-test, suppose we examine the null hypothesis that the samples of Y values were drawn on the basis of the X's from a population having a normal bivariate distribution in X and Y with $\rho=0$. The $\rho=0$ means that a selection of cases upon the basis of the X variable is a random selection with regard to the Y's. Under the null hypothesis, then, the individuals in the top 10% of the X's are a random selection from a normally distributed Y population. This holds also for the individuals in the lower 10% of the X's. Pairs of samples chosen in this way will therefore show t-values distributed as t in the usual tables, and the t-test is appropriate for evaluating the probability of the sample when chosen in this way. If the t-test rejects the hypothesis that the samples were chosen in this way, we have then to decide which feature of the null hypothesis to reject. If we do not reject the normal bivariate distribution, we must reject the hypothesis that $\rho=0$ therein.

The null hypothesis need not have the restriction of normal bivariate distribution. It is necessary only to hypothesize that the Y's are normally distributed, and that a knowledge of X gives no information concerning Y in the population. In this less restricted case a selection on the basis of X is again a random selection with regard to Y, and a significant t rejects either the normality of the Y distribution or the hypothesis that a knowledge of X gives no knowledge of Y.

In the case of the chi-square test in a $2\times r$ table with r ordered categories, we must again proceed under the null hypothesis. If there is no relationship in the population between the X value of an individual and the Y of the category he falls into, then a selection on the basis of X is random with respect to category number; and the upper 10% of the X's should distribute themselves among categories in the same way that any other batch of X's will distribute themselves, and in particular the same way that the lowest 10% of the X's will distribute themselves. Under the null hypothesis, then the top 10% of the X's are a random sample of Y's, and so are the bottom 10%. If the chi-square test indicates that the $2\times r$ table for the sample would not arise under the null hypothesis, we reject the null hypothesis of no relationship between X and Y in the population.

The experimenter's feeling that "he is cheating" may be due to his fear of the age-old tendency of human beings to argue backward from phenomena to hypotheses instead of properly arguing frontward from hypotheses. A worker of respectable sophistication realizes the hazard of reasoning backward from his data and therefore needs to spell out in some such way as the above the correct reasoning under the hypothesis to see that he has not contorted his logic.

The further problem of comparing the sensitivity of this kind of test with that of other tests, is too lengthy to attack here.

P. J. Rulon

REGRESSION USING MINIMUM ABSOLUTE DEVIATIONS

Question 25. In fitting a regression line $Y=a+bX$, I would like to minimize the sum of the absolute deviations rather than the sum of the squares of the deviations. How can I do this?

Answer. The problem has been discussed by Edgeworth [1], Rhodes [2], and Singleton [3], the latter two considering the problem of fitting surfaces of any degree. Singleton gives essentially a method of steepest descent. For the case of two parameters, the Edgeworth-Rhodes method, essentially the one illustrated here, appears somewhat simpler, and lends itself well to graphical methods. All known methods involved a certain amount of trial and error. The problem is connected with that of linear programming.

Let S be the set of points (X_r, Y_r), $r=1, 2, \ldots, n$.

First consider how to find a line which is optimum among those which pass through the origin. Let θ be the angle, measured clockwise, from the positive Y axis to the line, $0 < \theta < 180°$. Call θ a "stopping angle" if it corresponds to a line passing through at least one point of S (not counting a point of S which may be at the origin). Let θ_0 be the smallest stopping angle such that for any line with $\theta > \theta_0$, the algebraic sum of the abscissae of the points of S below the line is less than or equal to $\frac{1}{2}\sum_{r=1}^{n} X_r$ (half the sum of the abscissae of all the points). Then θ_0 corresponds to an optimum line.

To find the best line among those passing through P, where P is any point, the same rule holds, except that θ is measured from the line through P parallel to the Y axis, and θ_0 is determined by the condition that for $\theta > \theta_0$, $\Sigma' X_r - kX \leq \frac{1}{2}\left(\sum_{r=1}^{n} X_r - nX\right)$, where $\Sigma' X_r$ is the sum of the abscissae of the points below the line, k is the number of points below the line, and X is the abscissa of P.

The procedure is then as follows. Let P_1 be any point of S (our set of observations), and let L_1 be an optimum line through P_1. Let P_2 be another point of S on L_1 (there is an optimum line containing at least one point of S besides P_1). Let L_2 be the best line passing through P_2; let P_3 be another point of S on L_2; L_3 the best line through P_3, etc. Eventually a line L will be reached, such that L contains the points $Q_1, Q_2, \ldots, Q_k$ of S, and no other points of S, and L is optimum among all lines which pass through $Q_1, Q_2, \ldots,$ or Q_k. It can be shown that any such line is a solution. There may be more than one

solution in very special cases. For example if four points are at the corners of the square (0,0), (0,1), (1,0), (1,1), this method locates some of the solutions, but not all of them. For example it locates $y=1$, $y=0$, $y=x$, but does not locate $y=1-x$, nor does it locate the many solutions which do not pass through two corners of the square, such as $y=.5+.1x$.

An interesting property of an optimum line (not applying to a line optimum among those passing through a point): let N_a, N_b, and N_0 be the number of points above, below, and on the line. Then

$$|N_a - N_b| \leq N_0$$

As an example consider the following data taken from page 111, example 6.6, in [4], and recentered for convenience.

	1	2	3	4	5	6	7	8	9	10
$x_1=X_1-83$	0	−11	−14	7	7	12	12	8	−8	−13
$y_1=Y_1-56$	0	−14	−38	28	0	51	34	12	−25	−8
$\frac{1}{2}\left(\sum_{r=1}^{n} x_r - nx_1\right)$	0	55	70	−35	−35	−60	−60	−40	40	65

We plot the points in the xy plane, see Figure 1, numbering each point and placing by each point its abscissa x_1 and the quantity $\frac{1}{2}\left(\sum_{r=1}^{n} x_r - nx_1\right)$. We start with the point (2) = (−11, −14) (we start with point (2) for convenience, for any other point could be used as a starting point). The line through (2) and (7) is the best line through (2), for if a line through (2) runs just below (7), we have

$$\Sigma' x_1 - kx_2 = (-7) - (5)(-11) = 48 < 55 = \tfrac{1}{2} - \left[\sum_{r=1}^{n} x_r - 10(-11)\right],$$

while if the line is just above (7),

$$\Sigma' x_1 - kx_2 = 5 - (6)(-11) = 71 > 55.$$

Similarly, the best line through (7) is the one passing through (3). For if the line through (7) is just above (3), $\Sigma' x_r - kx_7 = -7 - (5)(12) = -67 < -60$, while if just below (3), $\Sigma' x_r - kx_7 = 7 - (4)(12) = -41 > -60$. Similarly, the best line through (3) passes through (7). Thus the line through (3) and (7) is optimum.

With a very little practice one can use this method quite rapidly, although it does go slowly the first time or two.

T. E. HARRIS

References

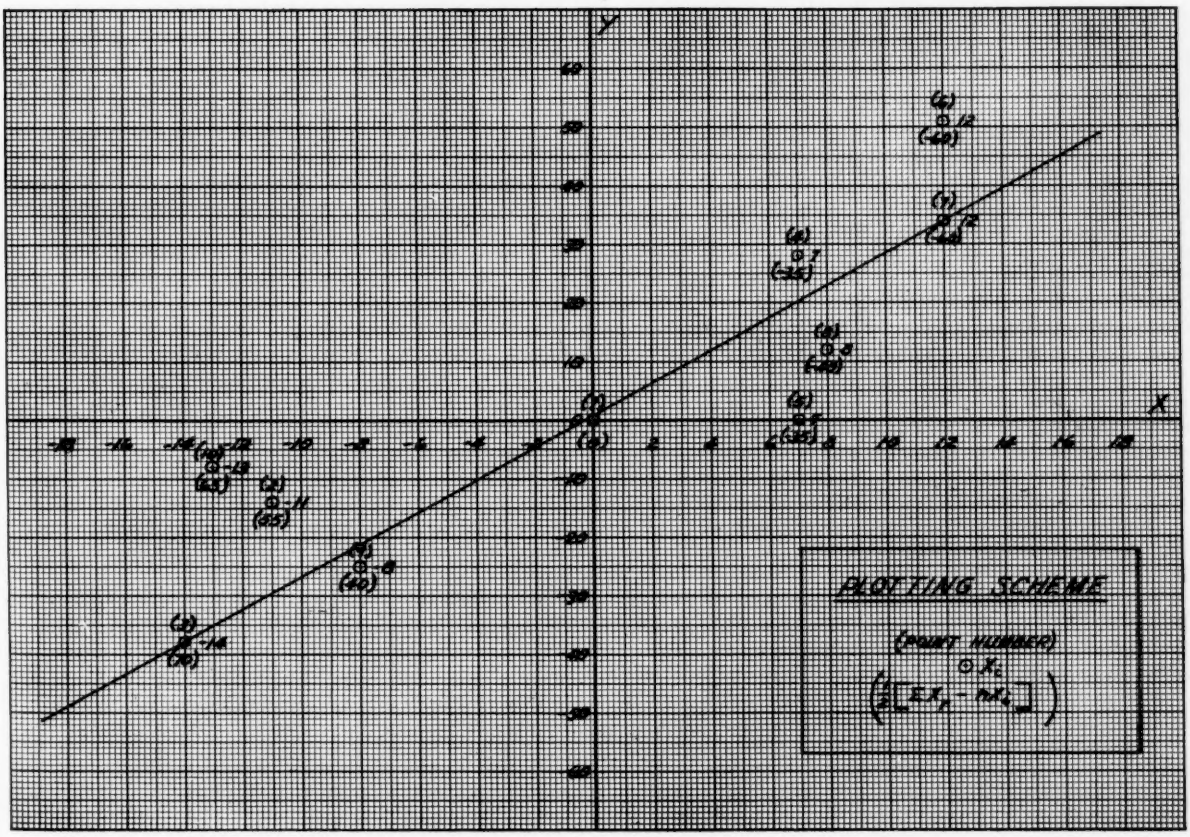
[1] Edgeworth, F. Y., "On the use of medians", *Philosophical Magazine*, 46, ser. 6 (1923), p. 1074.

[2] Rhodes, E. C., "Reducing observations by the method of minimum deviations", *Philosophical Magazine*, 9, ser. 7 (1930), p. 974.

[3] Singleton, R. R., "A method for minimizing the sum of absolute values of deviations", *Annals of Math. Stat.*, 11 (1940), p. 301.

[4] Snedecor, G. W., *Statistical Methods*, 4th edition, Iowa State College Press.

Figure 1. Graphical Solution for Regression Line with Minimum Sum of Absolute Deviations for an Example Drawn from Snedecor



 CONTINUED FROM PAGE 11

United Nations Statistical Yearbook

The Statistical Office of the United Nations has announced publication of the first issue of its Statistical Yearbook, continuing the series of Statistical Yearbooks formerly published by the League of Nations, the last of which related to 1945. Henceforth, it will be published annually by the United Nations.

The new publication provides, in English and French, a comprehensive collection of international statistics, summarized in convenient form. It has been prepared, in response to one of the early recommendations of the Statistical Commission, with the cooperation of the statistical offices of many countries and with assistance from Specialized Agencies of the United Nations and other intergovernmental bodies.

The Statistical Yearbook contains nearly 500 pages. In 158 tables, it presents the latest available figures on population, manpower, agriculture, forestry, fishing, industrial production, mining, quarrying, manufacturing, construction, electricity, gas, transport, communications, internal trade, external trade, balance of payments, wages, prices, national income, finance, social statistics and education. To the extent possible time series for each of these subjects are provided for each important country and for the world as a whole, for each year from 1928 to 1948.

Numerous explanatory notes, including an appendix on conversion coefficient of factors, are provided to assist the reader in interpreting the statistics. Another feature is a table of the subjects covered by existing Yearbooks of the United Nations and the Specialized Agencies, which forms a guide to the main body of International statistics.

Copies of the Statistical Yearbook may be obtained from International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y., at $6.00 per copy.

Business Information Sources

Because of the great surge of interest in quality control as a means of reducing costs in industry today, the Business Information Bureau of the Cleveland Public Library has devoted the current issue of its bulletin, BUSINESS INFORMATION SOURCES, to that subject. It contains recent references on *what quality control is, why quality control is emphasized today, statistical methods of quality control, administration of a statistical quality control program, reading lists on the subject* published by universities and professional associations and other related matters.

Copies are available from the Business Information Bureau, Cleveland Public Library, 325 Superior Avenue, Cleveland 14, Ohio, at 10¢ each to cover mailing and handling charges.

Chart available for gratis distribution

Calvin J. Kirchen, University of Michigan Aeronautical Research Center, Ypsilanti, Michigan, has announced that he has a number of copies of a chart which permits two-tailed probability evaluations of ratios of variances of two equal-sized samples at other than the conventional points of 5 and 1 per cent which are 10 and 2 per cent two-tailed levels, respectively. The chart was plotted from the tables of Thompson and Merrington *(Biometrika:* 33, pp. 73-88), the 20 per cent table of H. W. Norton *(Statistical Tables for Biological, Agricultural and Medical Research,* by Fisher and Yates; Oliver and Boyd, Ltd., Edinburgh and London), the .1 per cent table of Colcord and Deming *(Sankhya, ii,* pp. 423-424). The plotted points for 19 and 49 degrees of freedom were obtained by harmonic interpolation on n_1, linear interpolation on n_2.

Readers who are interested in having copies of the chart should write directly to Calvin J. Kirchen at the address given above.

National Bureau of Economic Research

Two recent publications of the National Bureau of Economic Research are "The Statistical Agencies of the Federal Government" by Frederick C. Mills and Clarence D. Long, and "The Rising Trend of Government Employment" by Solomon Fabricant. "The Statistical Agencies of the Federal Government" is the appraisal which Mills and Long presented to the Commission on the Organization of the Executive Branch of the Government (Hoover Commission) and summarizes their findings and recommendation with respect to the Federal statistical system. It is priced at $2.00, and may be obtained from the National Bureau of Economic Research, 1819 Broadway, New York, New York.

Mr. Fabricant's "Occasional Paper" is part of a larger study of productivity in service industries including government. Its importance is emphasized by the fact that now one out of every 9 or 10 persons employed in the United States is a Government worker.

International Social Science Bulletin

The first two issues of the International Social Science Bulletin of the UNESCO, have recently been distributed. This bulletin is being published in the hope that it may help to acquaint social scientists in various countries with work that has been conducted by both national and international social science organizations.

In addition to notes on current studies and projects, there is also a section on notes on the activities of international associations, reviews of books, articles and periodicals. Communications should be sent directly to the editor of the Bulletin, Department of Social Science, UNESCO, 19 Avenue Kleber, Paris 16, France.

Yale University "topics in applied statistics" Second term 1949-1950

March	7- 9	H. Hotelling (North Carolina)—Multivariate analysis.
	14-16	C. I. Bliss (Yale)—Discriminant function in biological assay.
	21-23	F. Mosteller (Harvard)—Statistical problems in social psychology.
	28-30	T. W. Anderson (Columbia)—Use of stochastic equation models in economics.
April	11-13	R. A. Fisher* (Cambridge)—Enumeration and recombination in genetics.
	18-20	W. G. Cochran (Johns Hopkins)—Estimation of components of variance and their use.
	25-27	W. Allen Wallis (Chicago)—Prediction of future observations, sequential analysis, statistics of the Kinsey Report.
May	3- 5	S. S. Wilks (Princeton)—Industrial statistics.
	9-11	H. F. Dorn (National Institute of Health)—Statistical problems in the measurement of morbidity.
	16-18	Donald Mainland (Dalhousie)—Statistics in clinical medicine.

(Dates and Topics subject to change.)
Open to all interested.

* Woodward lecturer.

Information: Further details on the course can be obtained from Mrs. S. H. Donahue (7-3131, extension 2321 or 2432), from Dr. C. I. Bliss (5-4173 or 5-4176), or from Dr. D. F. Votaw, Jr. (7-3131, extension 2430).

Society of Military Accountants and Statisticians

At the last election of national officers of the Society of Military Accountants and Statisticians, members of the American Statistical Association were selected to the two highest offices. They were Lt. Joseph C. Armour who was elected President and Capt. Samuel V. Anthone who was elected First Vice President.

Map Presentation III

Avoiding the "Small State" Problem

by W. DEAN COMPTON

Editor's Note: An article in the April-May issue discussed briefly the undesirability of shaded-area map presentation when the data are not in terms of area, and considered the advantages and disadvantages of alternative methods of presentation. The present article discusses an ingenious method of meeting this problem.*

In a geographic distribution of magnitudes, graphically represented, the "small state" problem is almost always present. This is true whether the graphic devices used are linear forms such as bars, or 2-dimensional forms such as discs or squares; and the greater the range between the higher and lower values in the data the more troublesome is the problem of avoiding "crowding" in the small areas. Unfortunately the data seem never to cooperate by distributing the smaller magnitudes in the small states and the larger in the large.

The usual approaches are to: (1) contract the scale to keep the largest bars or squares within their respective areas—and thus lose all differentiation between smaller values—or, (2) expand the scale to bring out the smaller differences and let the larger graphic forms extend into one or more non-related areas. Neither of these solutions is a happy one.

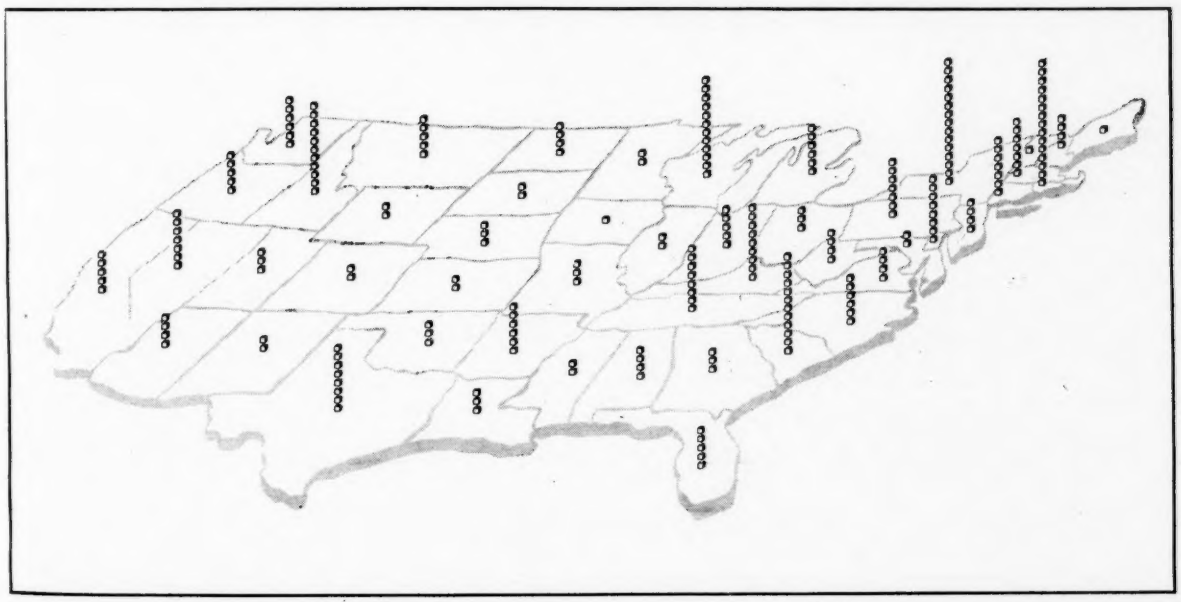
The accompanying illustration presents one solution to this problem. This method of presentation creates the illusion that the symbols are all placed on a common base and are all contained within their respective areas. This effect is produced largely by the use of a perspective map, or a map which at least gives the *appearance* of being drawn in perspective. In addition, the bars have been given a third dimension to further this illusion. It should be noted, however, that the bars are not actually drawn in perspective. To do so would complicate, if not destroy, the comparative relationships of magnitudes as seen by the eye. This is readily understood when it is realized that, in any perspective drawing, the size of the scale diminishes as it moves further away from the eye. At best, the use of perspective as applied to measurements of magnitude requires a careful mental adjustment to overcome the impression received by the eye.

In any graphic presentation of magnitudes, the aim is to permit a clear study of *comparative* relationships. In other words, it is the perceived size relationship of symbol against symbol that is important rather than the determination of exact values. However, it is almost always desirable to provide the reader with some ready means of learning the numerical values of the magnitudes, at least approximately. In the map below, this feature is provided by the use of blocks instead of unbroken bars. Thus the reader can readily see the number of units that each bar represents. (Coins or other three-dimentional forms stacked one upon the other could, of course, be used in the same way.) Unfortunately, since everything has its problems, this technique has one of its own: there is sometimes a bit of a problem in getting the blocks to work out in terms of even units of measurement. In a scale of 50, for example, some compromise must be made with the fact that 50 minute blocks would be so small that their identity would be lost. The usual solution is to let each block represent 5, 10, or some other appropriate number of units that will permit the use of a few readily counted blocks. But this problem occurs in any graphic-unit presentation: the major point to be emphasized here is that the graphic device used must be given a third dimension to maintain the illusion of perspective that is provided by tilting the map away from the eye. Flat bars or flat squares or discs, used with such a map, would produce an incongruous and awkward effect and would not sustain the illusion that they begin at a common base.

One or two production notes may be in order. First, the stacks of blocks need not be drawn individually: it is only necessary to draw a single stack of 20 or so blocks that can be reproduced in the desired quantity by photostat or some other reproduction process, and then cut to the desired lengths and pasted on the drawing. Second, the perspective map can be obtained by first mounting a standard outline map on a piece of rigid board and then taking a picture of it (photostat will do the trick) tilted at an angle to produce the desired perspective. The result is likely to be a little fuzzy, but since it is usually necessary to trace this picture anyway to provide a proper original, this problem offers no difficulty.

Although map presentation is not as widely used or needed as chart presentation, the problems it brings are just as troublesome and their solution is perhaps less widely known. The presentation method described in this article may be useful in helping to solve one of the most persistent of these problems.

* "Area Bias in Map Presentation."



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Ann Harbor, Michigan. A/S
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Report on Plans for Regional Meetings

by IRVING H. SIEGEL
The Johns Hopkins University

To facilitate the development of the regional meeting program of the Association, the Secretary-Treasurer requested that a brief study leading to specific recommendations be made. The recommendations outlined below are the result of that study, as modified in the light of the discussion at the New York meeting of chapter and district representatives with the national officers on December 28, 1949.

RESPONSIBILITY FOR ORGANIZATION OF REGIONAL MEETINGS

The new District Committees (established in accordance with Article V, Paragraph 2 of the Constitution) should take the initiative in scheduling and planning regional meetings, making such arrangements as are necessary with chapters of the Association and of affiliated societies.

TIMING OF REGIONAL MEETINGS

The frequency of regional meetings, including the date of the first meeting, should be determined by each District Committee in accordance with regional conditions. Uniformity is not essential and may even be undesirable. In any case, no regional meetings should conflict with the annual meeting of the Association. At least in the beginning, if not as a general practice, it would seem desirable to attempt to arrange joint meetings with any kindred societies already holding regional meetings.

PLACE OF REGIONAL MEETINGS; RELATION TO CHAPTER FORMATION

Consecutive regional meetings should preferably be held in different accessible cities of the District. Consideration should be given to the possibility of holding meetings on university campuses since dormitory accommodations would be relatively inexpensive.

The scheduling of a meeting in a statistical center not yet having a chapter could provide the occasion for arousing interest in forming one. The meeting itself could be the occasion for the granting of a charter. A national officer should, if possible, participate in the chartering ceremonies. In the planning of regional meetings and in the consideration of new chapters, attention should be given to the Constitutional provision (Article V, Paragraph 1) for the chartering of existing local bodies "with objects similar to those of the Association."

PROGRAM OF REGIONAL MEETINGS

The program should adequately reflect the diversified interests of regional members and avoid undue specialization in the techniques and subject matter more appropriate to kindred organizations, like the Institute of Mathematical Statistics and Econometric Society. Speakers should be representative of regional statistical activities and should come from all chapter (and at least some potential-chapter) cities. In the interest of wide participation, sufficient provision should be made for the programming of short (10-minute) papers on subjects of local interest. Seminars might also be held on subjects of particular interest in the region – e.g., on industrial sampling problems. In planning programs, District Committees should bear in mind the responsibilities of the national Section Committees (Biometrics, Business Statistics, and Training of Statisticians), establish liaison with these through the Secretary-Treasurer, and then maintain direct relations.

SOME BASIC DATA FOR PLANNING MEETINGS

District Committees will have need for fairly up-to-date information on the statistical interests and activities of the regional membership, the geographic distribution of the membership, and the names and activities of statistical centers in the area (especially those which could ultimately form chapters or provide substantial numbers of new members). In addition to using the latest membership directory, the District Committees may be able to obtain needed information through correspondence with chapters or special surveys (the results of which would also be of interest to National Headquarters).

PUBLICATION

The quality of regional meetings, as well as the vitality of the Association, would be favored by the likelihood of publication of outstanding papers in full or in abstract form. A policy concerning the allocation of space in the *Journal* or in the *American Statistician* for this purpose should be formulated. Consideration should also be given to the publication, under national Association sponsorship, of full proceedings of regional meetings.